

REMARKS/ARGUMENTS

Claim 22 has been amended to specifically point out that the gas-radical mixture is flowed to remove residue and that the process occurs without a substrate in the chamber. This amendment has been made solely to expedite prosecution. While applicants have made these amendments and present further arguments, applicants respectfully maintain their previous arguments.

The two references cited in the final office action are Shang¹ and Markunas.² While Shang discloses both deposition and cleaning processes, Markunas only grows epitaxial semiconductor layers. Because Markunas grows a substrate, it is necessary that the substrate is be found within the chamber. The claimed invention, on the other hand, requires that each step occur without a substrate within a chamber. And the claimed method is explicit in that the gas-radical mixture is flowed in order to remove residue from within the chamber. Markunas is in complete opposition with the claimed subject matter.

The use of Markunas for residue removal would modify the teaching of the reference in away that is unsatisfactory for its intended purpose.³ The intended purpose of Markunas is to grow a substrate. To combine the reference with Shang would change the purpose of Markunas to removing residue rather than adding substrate layers. Such a change modifies Markunas such that the reference would act in opposition with its purpose. Thus, there is no reason to use Markunas to modify the teachings in Shang.

Moreover, even if these references can be combined, does not render the resultant combination is obvious. To be obvious, the results must be predictable.⁴ Here, a person having ordinary skill in the art would not predict that the addition of steps from a substrate growing process could be used with a residue removal process. The two processes are simply too different. Because the two processes work in opposition with each other, such a person would believe just the opposite. Hence, combining Shang with Markunas would not lead to predictable results.

¹ U.S. Patent No. 5,788,778.

² U.S. Patent No. 5,018,479.

³ MPEP 2143.01 V.

⁴ MPEP 2143.01 III.

The cited prior art does not render the claimed method for removing residue from a substrate processing chamber as obvious. In light of these comments and the substantial prosecution history, Applicants would appreciate the speedy allowance of these claims. If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 303-571-4000.

Respectfully submitted,

/Jason A. Sanders/

Jason A. Sanders
Reg. No. 59,984

TOWNSEND and TOWNSEND and CREW LLP
Two Embarcadero Center, Eighth Floor
San Francisco, California 94111-3834
Tel: 303-571-4000
Fax: 415-576-0300
J7S:seo
62392294 v1